

WHAT IS CLAIMED IS:

1. A cover for use in sealing and securing a multi-well plate and adapted for mechanical manipulation, said cover comprising:
- (a) a lid dimensionally suited to covering a multi-well plate and providing a means for developing a normal spring force by means of a flexible curvilinear section of said lid;
 - (b) a plurality of projections and apertures integral to said cover plate;
 - (c) a uncompressed gasket disposed on one side of said lid; and
 - (d) two side walls of said lid approximately perpendicular to said curvilinear section of said lid, said side walls providing an attachment means for a multi-well plate, wherein said side walls, in the process of securing said multi-well plate, cause the deformation of said curvilinear section of said lid resulting in a normal spring force being applied to the gasket, compressing said gasket against the upper planar surface of the multi-well plate and effecting a seal.
2. The cover of claim 1, wherein approximately four of the projections function as notched tabs with locator holes for the gripping of said cover by mechanical methods.
3. The cover of claim 1, wherein at least two of the projections extending from and in the same planar relationship as the side walls of said lid function as stacking lugs.
4. The cover of claim 1, wherein at least two of the apertures formed in the approximately 90 degree bend between the side wall and curvilinear section serve as stacking locators.
5. The cover of claim 1, wherein the geometrical relationship of the stacking lugs and stacking locators is such as to align vertically one said cover upon another said cover in a stacked relationship.
6. The cover of claim 1, wherein each of the side walls has a formed element distal to the curvilinear section, which serves as a multi-well plate holder.

7. The cover of claim 1, wherein the uncompressed gasket material is formed from a thermoplastic polymer or elastomer having a durometer of Shore 15A or less and having low extractables in dimethyl sulfoxide.

8. The cover of claim 1, wherein the lid is formed from a material selected from the group consisting of steel, spring steel, stainless steel, and stainless spring steel, and has a thickness between about 0.015" and 0.024".

9. A multi-well plate sealed with a multi-well plate cover, comprising:

- (a) a multi-well plate with an approximately 3" x 5" footprint with a uniform array of wells and a skirt extending around the perimeter of said multi-well plate;
- (b) a compressed gasket extending over the upper surface of said multi-well plate sealing individual wells;
- (c) a lid disposed on said compressed gasket providing a normal force compressing said gasket and securing said multi-well plate by means of side walls extending past the perimeter skirt of said multi-well plate and engaging the bottom of said skirt by means of multi-well plate holders; and
- (d) a plurality of projections and apertures integral to said cover plate providing a means for mechanical manipulation of said cover and multi-well plate and stacking functionality of said cover and multiwell plate.